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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/620,462	07/20/2000	Jac-scong Shim	1293.1127	3797

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STEIN, MCEWEN & BUI, LLP  
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WASHINGTON, DC 20005

EXAMINER
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HO, THOMAS M

ART UNIT	PAPER NUMBER
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2132

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/620,462

Applicant(s)

SHIM, JAE-SEONG

Examiner

Thomas M. Ho

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-16,23-33,41-43 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-7,9-16,23-33 and 41-43 is/are allowed.
- 6) ☒ Claim(s) 47-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The response of 11/22/06 has been received and entered.
2. Claims 1-7, 9-16, 23-33, 41-43 are allowable.
3. Claims 47-49 are rejected.

### *Response to Arguments*

4. Applicant's arguments have been fully considered, but are unpersuasive.

The Applicant has argued that Sensyu teaches away from using 64KB for an ECC block. The Examiner contends however that claim 47 merely discloses a series of parameters for which the blocks of the random data generator may be attuned for.

Sensyu teaches that

*"The ECC block is desirably increased in size for improving the correction capability with respect to errors."* in situations where the optical recording density is increased.

While Matsui has provided the structure, Sensyu has provided the disclosure and the recognition in the art of making the data of the encoding block to be 64 KBs.

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In reality, the Examiner notes that with respect to the computer art, the mere selection of different sizes of data blocks constitutes a parameter that is often predicated by virtue of design choice. Whether a computer informational block is stored as a 32KB block, or a 64KB block is understood by those of ordinary skill in the art as within the common boundaries of manipulation to which a practitioner of the art of computer science.

Just as a carpenter would naturally opt for a larger wrench to screw in a larger bolt, a computer scientist would manipulate larger blocks of data naturally as the informational processing load is greater.

The Examiner has not uncovered any explicit recitation of the precise parameters in any single reference during the search of the art. However Sensyu provides a suggestion that ECC blocks may be increased in size for improving the correction capability.

Sensyu, furthermore provides the conception that it is at least conceivably possible to have an encoding block of 64KBs.

For this reason, the Examiner maintains his position that it would have been obvious to one of ordinary skill in the art, to use a 64 KB block.

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To address Applicant's specific point of contention, Sensyu does not teach away from extending the ECC block size to 64 KBs. Rather, Sensyu teaches that it is advantageous to have a larger ECC block, but that the ECC block cannot be made larger than 64 KBs.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over ECMA-267 120mm DVD Read Only Disk and US patent 6125100, Sensyu.

In reference to claim 47:

ECMA-267 120mm DVD Read Only Disk. (Sections 16-19) discloses a data scrambler comprising:

- A random data generator which generates the random data using 32 KB in order to scramble data having structure of 2KB for a sector or a data frame. (Sections 17 & 18)
- A scrambling circuit which scrambles the generated random data and outputs scrambled data in units of bytes. (Sections 17 & 18)

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ECMA-267 fails to explicitly disclose the limitation wherein 64KB is used for an ECC block.

US patent 6125100 (Column 8, lines 10-32) discloses an ECC block that is 64 KB and additionally discloses that it is desirable to increase the size of the ECC block for improving the error correction capability. Furthermore, even though it is taught by US patent 6125100 that it is desirable to increase the ECC block size, it cannot be increased beyond 64KB without failing suitable measures.

(59) An optical disc having its recording density improved to such an extent that not less than 2 such encoding blocks of the digital video disc can be recorded in the innermost nm of the disc is considered. The ECC block is desirably increased in size for improving the correction capability with respect to errors.

(60) In general, the data size to be handled is desirably of the order of powers of 2 in view of management (addressing). In a general Galois field GF (2.sup.8) used in the Reed Solomon product Code (RSPC), the lengths in the PI and PO directions can be set up to 255 symbols. That is, the product of the numbers of symbols in the PI and PO directions is 255.times.255=65025. However, this product is smaller than 64 kbytes. That is, since 1k=1024, the above product is smaller than 64k=65536 and, of course, cannot be made larger than 64 kbytes which is a data volume of the encoding block. Therefore, the ECC block size cannot be increased failing suitable measures.

It would have been obvious to one of ordinary skill in the art at the time of invention to scramble and create 64k ECC blocks instead of 32k ECC blocks in order to improve the error correction capability.

In reference to claim 48:

ECMA-267 120mm DVD Read Only Disk. (Sections 16-19) discloses the scrambler of claim 47, wherein the random data generator comprises:

- A 15-bit serial register r0 through r14 for generating the random data by shifting left synchronized with a clock input for scrambling; and (Sections 17 & 18)
- An exclusive OR gate for outputting an exclusive OR value exclusive-OR ing output from the higher-most register r14 and output from the lower register r10 to the lower-most register r0 (Sections 17 & 18)
- Wherein the scrambler includes an exclusive OR logic circuit which supplies the result of exclusive-ORing 1-byte input data D0 through D7 and each of the 8 outputs of the lower registers r0 through r7 after left-shifting the 15 bit register r0 through r14 8 times. (Sections 17 & 18)

Claim 49 is rejected for the same reasons as claim 47.

### *Conclusion*

7. The following art not relied upon is made of record:

- US patent 6898171 discloses:
- A random data generator which generates the random data using 32 KB in order to scramble data having structure of 2KB for a sector or a data frame and 64 KB for an ECC block. (Column 15, lines 55-65) & (Column 9, line 65 – Column 10, line 35)
- A scrambling circuit which scrambles the generated random data and outputs scrambled data in units of bytes. (Column 15, lines 55-65) & (Column 9, line 65 – Column 10, line 35)

However, because the priority date extends only as far back as November 26<sup>th</sup>, 1999 and the Applicant has priority to 7/20/1999, US patent 6898171 was not applied as a prior art reference.

- US PGPUB 2002/0012528 discloses an ECC block 64 KB is size:
- [0148] Note that the sector size of each stream block can be variously set. As a preferred embodiment, a stream object unit (SOBU) made up of two ECC blocks (32 sectors) and having a constant size (64k bites) can be used as a stream block like stream block #.mu. in FIG. 4.
- [0149] When the stream block is fixed to be an SOBU having a constant size (e.g., 2 ECC blocks=32 sectors =64k bites), the following merits are obtained.



*Conclusion*

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of the final action and the advisory action is not mailed under after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension pursuant to 37 CFR 1.136(A) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication from the examiner should be directed to Thomas M Ho whose telephone number is (571)272-3835. The examiner can normally be reached on M-F from 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571)272-3799.

The Examiner may also be reached through email through [Thomas.Ho6@uspto.gov](mailto:Thomas.Ho6@uspto.gov)

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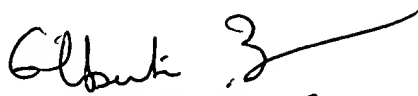
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

General Information/Receptionist Telephone: 571-272-2100 Fax: 571-273-8300

Customer Service Representative Telephone: 571-272-2100 Fax: 571-273-8300

TMH

February 20<sup>th</sup>, 2007

  
GILBERTO BARRON JR  
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